

# EUROPEAN PATENT OFFICE

## Patent Abstracts of Japan

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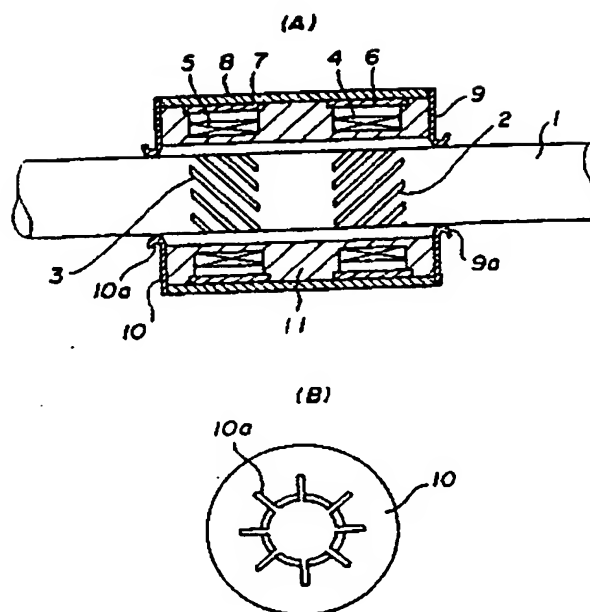
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TITLE : STRAIN DETECTOR



**ABSTRACT :** PURPOSE: To improve noise resistance by covering a gap between yokes and a receiving shaft with slip rings made of metal material whose thickness is thicker than the skin depth which is determined by conductivity, permeability and magnetic flux frequency.

CONSTITUTION: When torque is applied on a receiving shaft, stress is generated. The permeabilities of magnetostriction element-piece groups 2 and 3 are changed by the strain. Detecting coils 4 and 5 detect the change in permeability as the change in magnetic impedance. Outputs corresponding to the applied torque are generated from detecting circuits (not shown) which are connected to the detecting coils 4 and 5. Yokes 6 and 7 becomes parts of the magnetic paths of the magnetic fluxes which are generated by the current conduction through the detecting coils 4 and 5. The yokes act to prevent the leakage of the magnetic flux to the outside. A shield 8 prevents the leakage of magnetism from the inside and shields the intrusion of noise magnetic field from the outside. Slip rings 9 and 10 are formed with, e.g. phosphor bronze, prevent the leakage of the magnetic flux from the inside and also prevent the intrusion of electromagnetic waves from the outside. Owing to the shielding effect, sensitivity is improved.

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